OR Explain the summary of light reaction and draw a diagram of Z-Scheme.

10. Explain dark reactions of photosynthesis.

OR Write a note on calvin cycle.

OR Describe Melvin Calvin's Cycle.

OR Who discovered the dark reactions? Write the summary of dark reactions of photosyntesis.

OR What is Photosystem? Explain the Calvin Cycle.

7.2.2

11. Describe the role of light and chlorophyll in plants.

OR What is the role chlorophyll and light in photosynthetic process? Explain.

12. Write a note on limiting factors of photosynthesis.

7.3 **7.3.1**

13. Differentiate between aerobic and anaerobic respiration.

OR What is meant by Aerobic and Anaerobic Respiration? Also describe the types of Anaeobic Respiration.

OR Define Respiration and explain different types of Anaerobic Respiration.

14. Define Anaerobic Respiration and explain its types.

OR Describe two types of Anaerobic Respiration.

15. Write importance of anaerobic respiration.

7.3.2

16. Write a note on electron transport chain.

OR Electron transport chainis a step of cellular respiration. Explain

17. Compare photosynthesis and respiration.

18. Describe the mechanism of respiration.

7.3.3

19. Write a note on energy budget of respiration.

Unit-8 Nutrition

(MCQs)

8.1 Mineral Nutrition in Plants

1- **Number of micronutrients in plants are:**
(A) 6 **(B) 8**
(C) 10 (D) 12

2. **Number of micronutrients is:**
(A) 12 (B) 14
(C) 9 (D) 19

3- **Activates many enzymes:**
(A) Potassium (B) Nickel
(C) Iron (D) Chlorine

4- **Deficiency of which element cause yellowing of leaves?**
(A) Zinc **(B) Magnesium**
(C) Copper (D) Chlorine

5- **A macronutrient which is component of ATP, nuclei acid, and co-enzymes:**
(A) Phosphorous (B) Iron
(C) Iodine (D) Boran

6- **______ is a micronutrient:**
OR **The example of a micronutrients is:**
(A) Sulphur (B) Calcium
(C) Iron (D) Potassium
OR (A) Nitrogen **(B) Zinc**
(C) Magnesium (D) Potassium

7- **Example of Vitamin is:**
(A) Riboflavin (B) Glucose
(C) Fatty acid (D) Glycerine

8.2 Components of Human Food

8- **The name of disease produced due to the deficiency of iron is:**
(A) Anaemia (B) Fever
(C) Flu (D) Tetanus

9- **Why children need more calcium and iron?**
(A) For bones
(B) For blood
(C) Calcium for bones & iron for blood
(D) Calcium for blood & iron for bones

10- **It helps in blood clotting:**
(A) Calcium (B) Phosphorus
(C) Nitrogen (D) Sodium

11- **Which mineral is essential for development and maintenance of**

bones and teeth?
(A) Potassium (B) Sodium
(C) Iodine (D) Calcium

12- Citrus fruits are source of vitamin.
(A) Vitamin A (B) Vitamin B
(C) Vitamin C (D) Vitamin D

13- Disease caused by the deficiency of vitamin C is:
OR Disease scurvy is caused by the deficiency of:
(A) Scurvy (B) Rickets
(C) Goiter (D) Malaria
OR (A) Vitamin A (B) Vitamin B
(C) Vitamin C (D) Vitamin D

14- Scurvy is caused by the deficiency of ....:
(A) Vitamin A (B) Vitamin K
(C) Vitamin D (D) Vitamin C

15- Diseaes of Rickets occur in children due to lack of vimtain:
OR In children, deficiency of vitamin D causes.
(A) Vitamin A (B) Vitamin B
(C) Vitamin C (D) Vitamin D
OR (A) Osteomalacia
(B) Scurvy
(C) Night blindness
(D) Rickets

16- In which year vitmain A was identified?
(A) 1914 (B) 1913
(C) 1813 (D) 1920

17- Blindness is caused by the deficiency of vitamin.
OR- Night Blindness is caused by the deficiency of vitamin:
(A) Vit A (B) Vit B
(C) Vit C (D) Vit D

18- Whcih disease cause by the deficiency of vitamin A.
(A) Scurvy
(B) Rickets
(C) Ostemalacia
(D) Night blindness

19- It is responsible for differenciation of cell:
(A) Vitamin A (B) Vitamin B
(C) Vitamin C (D) Vitamin D

20- Which is water soluble vitamin?
(A) Vitamin A (B) Vitamin B complex
(C) Vitamin D (D) Vitamin E

21- Fat soluble vitamins are:
(A) A,B,C,D (B) A,D,E,K
(C) A,C,E,K (D) B,C,E,D

22- Which is not fat soluble vitamin among the following:
(A) Vitamin A
(B) Vitmamin B / and C
(C) Vitamin D
(D) Vitamin E

23- Every animal takes food, whose 2/3 part consists of:
(A) Proteins
(B) Carbohydrates
(C) Minerals
(D) Vitamins

24- What are basic nutrients that provide quick useable energy to the body?
(A) Carbohydrates
(B) Proteins
(C) Lipids
(D) Nucleic Acid

25- What are the primary nutrients that provide quick useable energy to the body?
(A) Lipids
(B) Carbohydrates
(C) Proteins
(D) Nucleic Acids

26- The basic source of energy is animals is:
(A) Lipids
(B) Proteins
(C) Carbohydrates
(D) Nucleic Acids

27- One gram of carbohydrates has kilo calorie energy:
(A) 2 (B) 4
(C) 6 (D) 8

28- The most widely used carbohydrate to get energy is:
(A) Maltose (B) Sucrose
(C) Glucose (D) Lactose

29- One gram of protein has energy:
(A) 4 K C (B) 5 K C
(C) 6 K C (D) 7 K C

30- Proteins are composed of:
(A) Fatty acids
(B) Acetic Acid
(C) Amino acids
(D) Minerals

31- Which solution test indicates the presence of protein?
(A) Sudan red solution

(B) Iodine solution
(C) Benedicts solution
(D) Biuret solution

32- Element required for the function of harmone insulin is:
(A) Zinc (B) Chromium
(C) Calcium (D) Iron

33- One gram of lipid has energy (kilocalories)
(A) 04 (B) 09
(C) 06 (D) 07

34- How much % of lipid is present in Milk?
(A) 10% (B) 12%
(C) 0.9% (D) 04%

35- Butter contain .... percent of saturated fatty acid:
(A) 50 (B) 60
(C) 70 (D) 80

8.2.2 Effects of Water and Dietary Fibre

36- Whose saying is this that make medicine to your nutrition.
(A) AFA king (B) Aristottle
(C) Buqrat (D) Suqrat

37- The example of insoluble dietary fibre in human food is:
(A) beans (B) wheat bran
(C) rice (D) barley

8.2.3 Balanced Diet

38- The diseases of Kwashiorkor and marasmus may be due to:
(A) Mineral deficiency
(B) Over intake of nutrients
(C) Protein energy malnutrition
(D) Ulcer

39- The disease cuased by deficiency of protein is:
(A) Colour blindness
(B) Marasmus
(C) Osteoarthritus
(D) Goiter

40- Which diseas is caused by an insufficient amount of iodine?
(A) Scurvy (B) Rickets
(C) Malaria (D) Goiter

41- Goiter is caused due to the deficiency of:
(A) Iodine (B) Ca
(C) Fe (D) Na

42- Important for thyroid gland's function:
(A) Chlorine (B) Iodine
(C) Zinc (D) Calcium

8.3 Digestion in Human

43- The process of taking food in the body is called:
(A) Digestion (B) Ingestion
(C) Absorption (D) Assimilation

44- The process of breaking up of complex substances into simpler substance is called:
(A) Ingestion
(B) Digestion
(C) Assimilation
(D) Absorption

45- Elimination of undigested food from the body is called:

OR Elimination of undigested food from the body is called:
(A) Ingestion
(B) Absorption
(C) Digestion
(D) None of these

OR
(A) Ingestion (B) Absorption
(C) Defecation (D) Digestion

46- Elimination of undigested food from the body is called:
(A) Ingestion (B) Digestion
(C) Defection (D) Assimilation

47- Saliva contains an enzyme called:
(A) Amylase (B) Lipase
(C) Protease (D) Trypsin

48- The largest gland of the body is:
(A) Pancreas (B) Heart
(C) Liver (D) Gallbladder

49- Liver belongs to:
(A) Blood circulatory system
(B) Digestive system
(C) Respiratory system
(D) Excretory system

8.3.1 Human Alimentary Canal

50- Which one of the following organ is part of digestive system?
(A) Lungs (B) Oral cavity
(C) Kidneys (D) Heart

51- The second function of oral cavity is grinding of food in teeth is called:
(A) Lurication (B) Churning

(C) Mastication (D) Assemilation

52- Movement of muscles that pushes food through digestive system is called:
OR The wave like contraction and relaxation in the smooth muscles in the walls of alimentary canal is called:
(A) Emulsification
(B) Churning
(C) Absorption (D) Peristalsis

53- The process of breaking down of large droplets of fat into small droplets called:
(A) Digestion (B) Peristalsis
(C) Emulsification
(D) Absorption

54- Which of the following is not the function of Saliva:
(A) Digestion (B) Absorption
(C) Lubrication
(D) Stabilization of p^H

55- Non-functional enzyme that digest protein is:
(A) Pepsinogen (B) Pepsin
(C) Amylase (D) Lipase

56- Which enzyme works in stomach:
(A) Lipase (B) Tripsin
(C) Pepsin (D) Amylase

57- In stomach pepsinogen is converted into:
(A) Gastrin (B) HCl
(C) Bicarbonate (D) Pepsin

58- The name of compound that converts inactive enzyme pepsinogen into pepsin is:
(A) Hydrochloric acid
(B) Proteins
(C) Lipids
(D) Nucleic acid

59- Product of gestric Juice is:
(A) Water (B) Mucuse
(C) HCl (D) Amylase

60- Pancrease produce digestive enzyme and insert it in:
(A) Colone (B) Galblader
(C) Liver (D) Duodenum

61- Where are villi found?
OR Villi are found in:
(A) Esophagus
(B) Stomach
(C) Small Intestine
(D) Large Intestine

62- The reabsorption of water and salts is done in:
(A) Large intestine
(B) Small intestine
(C) Stomach
(D) Liver

63- The part of alimentary canal in which maximum absorption of nutrients occur.
(A) Oesophagus
(B) stomach
(C) small intestine
(D) large intestine

64- Last 3.5 meters long part of small intestine is called:
(A) Duodenum
(B) Jejunnum
(C) ileum
(D) None of these

65- Length of Oesophagus in adult human is:
(A) 20cm (B) 25cm
(C) 30cm (D) 35cm

66- Weight of Liver in adult human is:
(A) 2.5kg (B) 1.5kg
(C) 3km (D) 2kg

67- Feaces are temporarily stored in:
(A) Apendix (B) Rectum
(C) Galbladder (D) Pencreas

68- Hepatic portal vein takes blood from and supplies to:
(A) Small intestine to Liver
(B) Small intestine to heart
(C) Liver to Heart
(D) Small intestine to colon

69- Hepatic portal vein carries blood from small intestine to __________:
(A) Liver (B) Heart
(C) Kidney (D) Colon

70- Urea is formed:
(A) In Stomach
(B) In Liver
(C) In Gall bladder
(D) In Pancrease

71- Many bacteria live in colon produce:
(A) Vit K (B) Vit C
(C) Vit A (D) Vit D

72. Gastric ulcer occurs in which organ?
(A) Stomach (B) Lungs
(C) Kidneys (D) Liver

73. Hydrochloric acid kills the microorganism

present in which organ?
(A) Colon
(B) Samll Intestine
(C) Stomach
(D) Large Intestine

8.4 Disease of Elimentary Canal

74- Ulcer occur in:
(A) Stomach (B) Duodenum
(C) Oesophagus **(D)** All these

75. About what percentage of our population is diabetic?
(A) 10% (B) 12%
(C) 25% (D) 33%

Short Questions

8.1 Mineral Nutrition in Plants

1. What do you mean by Nutrition? What is its importance in plants and animals?
OR. Define Nutrition.

Ans. Nutrition: The process in which food is obtained or prepared, absorbed and converted into body substances for growth and energy is called nutrition.
Importance : Nutrition is essential for growth and energy and to function normally in plants and animals.

2. What is difference between nutrition and nutrients?

Ans. Nutrition:
The process in which food is obtained, prepared or absorbed and converted into body substances for growth and energy is called nutrition.
Nutrients:
Nutrients are the elements and compounds that an organism for energy or for the synthesis of new materals.

3. What is difference between Autotrophs and Hetetrophs?
OR What is autotroph? Give an exmple.

Ans. Autotrophs:
The organisms which can prepare their food are called autotrophs like plants.
Heterotrophs:
The organisms that can not prepare their food are called hetrotrohps like animals.

4. Define Eutrophication.

Ans. Eutrophication is increase in chemical nutrients in an ecosystem.

5. What are macronutrients? Give examples.
OR Name the macro nutrients.
OR. What are micronutrients? Give two examples.
OR Differentiate between Macronutrients and Micronutrients:

Ans. Micronutrients:
The nutrients which are required by plants in less quantity are known as Micronutrients.
Examples: Iron, Molybdemun Boron, Chlorine and Zinc etc.
Macronutrients:
The nutrients which are required by plants in greater quantity are known as Macronutrients.
Examples: Carbon, Hydrogen, Oxygen, Nitrogen, Magnesium and Potassium.

6. Differentiate between Major Minerals and Trace Minerals:

Ans. Major Minerals:
Daily requirement of major minerals is about 100mg or more. Sodium, Potassium, Chloride, Calcium, Magnesium & Phosphorus are its examples.
Trace Minerals:
Daily requirement of trace minerals is less than 100mg. Iron, Zinc, Copper, Chromium, Flouride & Iodine are its examples.

7. What are fertilizers? Write names of its two kinds.

Ans. Fertilizers: Materials which are added to soil resulted in plants, with desirable characteristics (e.g more fruit, faster growth, more attractive flowers) are called fertilizers.
Types:
(i) Organic fertilizers. (ii) Inorganic fertilizers.

8. What is difference between Organic and Inorganic fertilizer?
OR Define organic fertilizer with an example.

Ans. Organic Fertilizers:
The fertilizers which are composed

on organic compounds and obtained from plants and animals are called organic fertilizers.

Examples:

i) Urea ii) Animal Manure
iii) Compost

Inorganic Fertilizers:

The fertilizers which are composed on inorganic elements are called inorganic fertilizers.

Examples:

i) Rock Phosphate
ii) Elemental Sulpher
iii) Gypsum

9. Name the two natural inorganic fertilizers .(AJK-G2)-16

Ans. i) Rock phosphate
ii) Elemental sulphur
iii) Gypsum

10. What is the importance of fertilizers in Agriculture?

Ans. Fertilizers increase the yield of crops. Fertilizers increase the capacity of water drainage, Aeration & nutrient holding capacity of the soil.

11. Describe the role of chlorine and nickel in plants.

Ans. Chlorine: Involved in osmosis of water.

Nickel: Required in a nitrogen metabolism.

12. What is role of Nitrogen and Magnesium in Plants life?

Ans. Role of Nitrogen:

i) Nitrogen is a major component of proteins, hormones, chlorophyll, vitamins and enzymes are essential for plant life.
ii) Deficiencies of nitrogen can reduce yields.

Role of magnesium in Plants life:

i) It is used of fruit and nut formation and essential for germination of seeds.
ii) Deficiency of magnesium causes yellowing and wilting of leaves.

13. What is the role of calcium and Magnesium in plant life?

OR What is the role of magnesium in plants?

Ans. Role of Clacium in Plants life:

i) Calcium in plants activates enzyme.
ii) Calcium a constituent of plant cell wall.
iii) Calcium affects movement of water in plant cells.

Role of Magnesium in plants life:

i) Magnesium is an essential component of chlorophyll molecule.
ii) Deficiency of Magnesium causes yellowing of leaves and its willing.
iii) Magnesium is used in the formation of fruits and Nuts. It is also essential for seed germination.

14. Write the role of potassium in plant life.

Ans: Role of potassium in plant life:

(i) In plants Potassium Regulates the opening and closing of stoma.
(ii) It reduces water loss from the leaves.

15. Describe the role of iron in plant's life.

Ans: Role iron in plants life:

(i) Iron is necessory nutrient for photosynthesis.
(ii) Iron activates many enzymes in plants body.

8.2 Componants of Human Food

16. Write Components of Human Food.

Ans. Components of Human Food:

i) Carbohydrates ii) Lipids
iii) Proteins iv) Minerals
v) Vitamins vi) Water
vii) Dietary Fibres.

17. What do you meant by carbohydrates? Which is the simplest carbohydrates?

Ans. Carbohydrates are the compounds composed of carbon and hydrogen. They are basic source of energy. Simplest carbohydrate is glucose.

18. What are Lipids? Write its functions.

Write the function of Lipids in body and what are their sources?

OR Write any four sourses of lipids.

OR Write any four sources of Lipids.

Ans. Lipids: They are important food nutrients and are composed of fatty acids bonded to glycerol.

Functions: Lipids provide energy in the absence of carbohydrates. They are used to form membranes, the sheaths surrounding neurons and

certain hormones.

Source of lipids: Milk, butter, cheese, eggs, mutton, fish, mustard seeds, coconut and dry fruits are important sources of lipids.

19. What are Lipids? Also describe types of fatty acids.

OR What is meant by saturated and unsaturated fatty acids?

OR Define saturated fatty acids. Give example

Ans. Lipids: Lipids are important nutrients and present in both plants and animals. They are present in food and are composed of fatty acids bonded to glycerol. The fatty acids of lipids may be saturated or unsaturated.

a) Saturated fatty acids:

i) Saturated fatty acids have all of their carbon atoms bonded to hydrogen atoms.

ii) They are solid usually at room temperature.

Example: Butter, Ghee and Fat etc

b) Unsaturted fatty acids:

i) Unsaturated fatty acids have some of their carbon atoms double-bonded in place of a hydrogen atom.

ii) The lipids containing. unsaturated fatty acids are liquid at room temperature.

Example: oil

20. What are the health risks if we take more saturated fatty acids in our diet?

OR Write disadvantages of saturated fatty acids.

Ans. Saturated fatty acids can increase a person's cholesterol level. An increased cholesterol level may eventually result in the clogging of arteries and ultimately heart disease.

21. What is protein and from where we get it?

OR Write food sources of protein.

Ans. Proteins: They are composed of amino acids. Many protiens also acts as enzymes and use for getting energy.1gram of protein gives 04kilo calories.

Sources of protein: Dietary sources of proteins are meat, eggs, grains, legumes, and dairy products such as milk and cheese.

22. What do you mean by vitamin? Write the name of its types.

Ans. Vitamin: Vitamins are chemical compounds that are required in low amounts but are essential for normal growth and metabolism.

Types:

i) Fat soluble vitamins A, D, E, K

ii) Water soluble vitamins B, C

23. Write name of Fat Soluble vitamins.

Ans. Fat soluble vitamin include A, D, E and K.

24. What are water soluble vitamins? Give two examples.

Ans. Water soluble vitamins: The vitamins which are readily dissolved in water are called water soluble vitamins.

Examples: Vitamin B and vitamin C are water soluble vitamin.

25. Differentiate between Fat Soluble and Water Soluble Vitamins.

Ans. Fat Soluble Vitamins:

Fat Soluble Vitamins include Vitamins A, D, E and K.

Fat Soluble vitamins do not eliminates from the body. That's why its deficiency normally do not occur. Fat Soluble vitamins hence store inside the body.

Water Soluble Vitamins:

Water Soluble vitamins include vitamin B and C. water Soluble vitamins eliminate from the body and do not store within the body. That's why its deficiency may takes place inside the body.

26. What are sources of vitamin C?

Ans. We get vitamin C from citrus fruits (e.g. oranges, lemons and grape unit), leafy green vegetables, beef liver etc.

27. What is functions of Vitmain C in body?

OR What is the importance of Vitamin C?

Ans. Vitamin C participates in many reactions. It is needed to form collagen (a fibrous protein) that gives strength to connective tissues.

Collagen is also needed for the healing of wounds.

28. Write any four symptoms of deficiency of vitmamin C.
OR Write the Symptoms of Scurvy.
OR Define scurvy. Write its two symptoms.
OR Write down the symptoms of scurvy.

Ans. Symptoms of Scurvy:

i) Pain in Muscles and joints.
ii) Swollen and Bleeding Gums
iii) Slow healing of wounds
iv) Dry Skin

29. Name the two disease cause by deficiency of vitamin D.
OR Write the defects caused by the deficiency of vitamin-D.

Ans.

i) In children, vitmain-D deficiency leads to rickets.
ii) In adults, vitamin-D deficiency, cause osteomalacia, or "softening bones," increasing the risk for fractures in bones.

30. What cause of osteomalacia? What are its symptoms?
OR What is osteomalacia? Write two causes.

Ans. Defficiency of vitamin D is the cause of osteomalacia. Bones become soft and increases risk of fractures in bones.

31. Write down the names of diseases caused by the deficiency of Vitamin A:

Ans. Following are some diseases caused by deficiency of Vitamin A:

i) Night blindness
ii) Dry Skin
iii) Retard Growth

32. What is night blindness?

Ans. Deficiency of vitamin A is the leading cause of blindness in children worldwide. One of the symptoms of vitamin A deficiency is night blindness. It is a temporary condition, but if left untreated, it can cause permanent blindness.

33. How deficiency of vitamin A causes blindness?
OR How vitamin A is responsible for night blindness?

Ans. Vitamin A was the first fat-soluble vitamin identified (in 1913). It combines with a protein called opsin to form rhodopsin in rod cells of the retina of eye. When vitamin A is inadequate, the lack of rhodopsin makes difficult to see in dim light and causes night blindness.

34. From which sources Vitamin A can obtained?
OR Write down the four sources of vitamin A.(RWP-G2)-15

Ans. Humans get vitamin A from leafy vegetables (spinach, carrots), yellow/orange fruits (mango), liver, fish, egg, milk, butter etc.

35. From where Vitamin A and Vitamin D are obtained?

Ans. Vitamins:

Vitamin A	Vitamin D
Sources:	
1. Green leaved vegetables (Spinach, Carrot)	1. Fish liver Oil
2. Yellow Fruit	2. Milk
3. Fish	3. Ghee & Butter
4. Liver	4. Skin also synthesis Vitamin D
5. Eggs, Milk, Butter	

36. What is the role of Phosphorus in living organisms?

Ans. Phosphorus is responsible for development and maintenance of bones and teeth, blood clotting.

37. Write the role of potassium and calcium is human body.
OR What is function of Calcium and Iron in Human body?
OR What is role of Iron in Human body?
OR Write any two roles of calcium in human:

Ans. Role of calcium in human body:

i) Calcium is essential for the development and maintenance of bones and teeth.
ii) It is also needed for maintaining cell membranes and connective tissues and for the activation of several enzymes.
iii) Calcium aslo aids in blood clotting.

Role of iron in human body:

i) Iron plays a major role in oxygen transport and storage.

ii) Cellular energy production also requires iron. Because it acts as cofactor for many enzymes of cellular respiration.

iii) Iron also supports immune function.

38. Which diseases are caused due to the deficiency of calcium in human beings?

Ans. Deficiency of calcium:

i) Spontaneous discharge of nerve impulses which may result in tetany.

ii) Bones become soft. 3. Blood clots slowly.

iii) Wounds heal slowly.

39. How does iodine function in our body?

Ans: Iodine is a mineral found in some foods. Iodine is compulsory for normal functioning of Thyroid glands in our body.

40. What is meant by vitamins? Write two functions of vitamin A.

Ans: Vitamins: Vitamins are chemical compounds that are required in low amounts but are essential for normal growth and metabolism.

Vitamin A have following functions:

(i) Vitamin A form rhodopsin in road cells of the retina of eye. When vitamin A is inadequate, the lack of rhodopsin makes it difficult to see.

(ii) Vitamin A also supports bone growth and immune functions.

41. What is world food program? Write its two functions.

Ans: World Food Program: The world food program (WFP) is the food aid branch of the united nations.

(i) World food program distributes food world wide.

(ii) It provides food to more than 90 million people in 80 countries.

8.2.1	Effects of Water and Dietary Fibre

42. What is meant by Diatry Fibre?

Ans. Dietary fibre also known as "roughage" which is the part of human food that is undigestable. It is found only in plant foods and it moves undigested through stomach and small intestine and into colon.

43. Write down any two advantages of Fibrous food.

Ans. Advantages:

i) Fibre prevents and relieves constipation by stimulating the contraction of intestinal muscles, avoiding constipation reduces the risk of many other diseases.

ii) Soluble fibre helps in lowering blood cholesterol.

iii) Insoluble fibre speeds up the movements of carcinogens (cancer causing agents) from intestine.

44. What are the sources of the soluble dietary Fibres?

OR Write sourses of insoluble and soluble dietary fibre.

Ans. Sources of Soluble Dietary Fibres:

i. Oat Grains
ii. Legumes
iii. Barley
iv. Many fruits & vegetables

45. What is meant by dehydration?

Ans. The loss of excess of water is called dehydration.

8.2.2	Balanced Diet

46. Define Balance Diet.

Ans. A balanced diet may be defined as the one which contains all the essential nutrients (carbohydrates, proteins, lipids, minerals, vitamins) in correct proportion for the normal growth and development of the body. It should include different types of nutrients and should be according to the energy requirments.

8.2.3	Problems related to Nutrion

47. What is meant by Malnutrition?

OR Define malnutrition. Also give names of its any two types.

OR Name the common forms of Malnutrition.

Ans. Problems related to nutrition are grouped as malnutrition. It often refers to under nutrition resulting from inadequate consumption, poor

absorption, or excessive loss of nutrients. Malnutrition also includes over-nutrition, resulting from overeating or excessive intake of specific nutrients.

Example: Kwashiorkor and marasmus.

Forms of malnutrition:

i) Protein-energy malnutrition (PEM).
ii) Mineral deficiency disease (MDD).
iii) Over-intake of nutrients (OIN).

48. What is Protein Energy Malnutrition?

Ans.

i. Protein energy malnutrition means insuffient availability or absorption of protein and energy in the body.
ii. PM is the major cause of death of infants in developing countries.
iii. PEM may be the cause of :
 a) Kwashior b) Marasmus

49. Write name of two diseases due to protein energy malnutrition.

Ans. i) Kwashiokor ii) Marasmus

50. What is kwashiorkor?

OR Write cuases and symtoms of Kwashioikor.

Ans. Kwashiorkor is due to protein deficiency at the age of about 12 months when breast feeding is discontinued. it can also develop at any time during a child's growing years. Children may grow to normal height but are abnormally thin.

51. What do you know about Marasmus?

OR What is Marasumus?

Ans. Marasums:

i) This disease usually develops in infant between the age of 06 months to One year.
ii) The patient (childern) lose their all fat and muscle strength and acquire a skinny skeletal appearance
iii) Children with marasmus show poor growth and look smaller than their actual age.
iv) It is an example of protein energy malnutrition.

52. What are Minerals and from where we get them?

Ans. Minerals: Minerals are inorganic elements that originate in the earth and cannot be made in the body. They play important role in various body functions and are necessary to maintain health.

Source: Most of the minerals in human diet come directly from plants and water or indirectly from animals foods.

53. Name two diseases cause by the deficiency of Minerals.

Ans. i) Anaemia ii) Goiter

54. What Goiter?

OR Describe reason of Goiter and its effects on body.

OR How does deficiency of Iodine affect Tyroid Gland?

Ans. Goiter is a condition which is caused by an insufficient amount of iodine in the diet.

If sufficient iodine is not available in a person's diet, the thyroid gland becomes enlarged and it results in swelling in the neck and the condition is known as goiter.

55. What is Anaemia? Write down its causes.

OR Write about Anaemia which is produced due to mineral deficiency.

Ans. Anaemia: Literal meaning of the term "Anaemia" is "Deficiency of blood." An anaemic patient is weak and its cell face less supply of oxygen.

Causes of Anaemia:

i. The main cause of this disease is decrease in quantity of Red Blood Cells.
ii. If Iron is not available to the body in required amount, then reasonable amount of haemoglobin molecule is not formed. Hence Functional Red Blood Cells decrease in number.

56. What is Obesity? Why it is called the mother of diseases?

OR What is meant by Obesity?

OR Write two causes of Obesity.

Ans. Obesity: Obesity means becoming over-weight and it may also be due to malnutrition. People who take food that contains energy more than their requirement and do very little physical work can become obese. Obesity is

known as the mother-disease and may lead to heart problems, hypertension, diabetes etc.

57. What is Famine? What is the major cause of Famine?

Ans. Famine: Lack of enough food to feed all people living in an area is known as famine.

Cause of famine: The major causes of famine are unequal distribution of food drought, flooding or increasing population.

58. Major Causes of Famine:

OR Write two major reasons of famine.

Ans. Major Causes of Famine: Followings are some major causes of famine:

i. Unequal distribution of Food
ii. Drought
iii. Flooding
iv. Increasing Population

59. What is meant by Starvation?

Ans. Starvation means the severe deficiency of intake nutrients and energy. It is the disastrous result of malnutrition. Prolonged Starvation in Human may damage organs permanently and ultimately death occurs.

60. What is Drought?

OR What is Drought? Write its two disadvantages.

Ans. Drought: A drought is a period of time when there is not enough water to support agricultural and human needs.

Drought is usually due to a long period of below-normal rainfall.

Reason: Droughts decrease or even stop the crop yields and it results in famine.

61. Write two effects of increasing population.

Ans. In spite of the global increase in food production, millions of human beings are undernourished. In the over-populated regions of world, large populations over use natural resources to grow maximum food in order to meet the problems of food shortage. It leads to dry and infertile lands and depletion of resources. In such situations crops can no longer be grown and famines result.

62. What is meant by WFP?

Ans. WFP stands for "World Food Program". It is the food aid branch of the United Nations. It is the world's largest agency providing food to more then 90 million people in 80 countries.

63. Write symptoms of Goiter and Aneamia?

Ans: Symptoms of Goiter: Goiter is a condition which is caused by an insufficient amount of iodine in the diet. If sufficient iodine is not available in a person's diet, the thyroid gland becomes enlarged and it results in swelling in the neck and the condition is known as goiter.

Symptoms of Anemia: The main cause of this disease is decrease in quantity of Red Blood Cells. If iron is not available to the body in required amount, then reasonable amount of haemoglobin molecule is not formed. Hence functional red blood cells decrease in number.

8.3 Components of Human Food

64. What is meant by digestion?

OR Define Digestion.

Ans. Process in which large and non-diffusible molecules are converted into smaller and diffusible molecules is called digestion. i.e salts, amino acids, simple sugars, fatty acids and vitamins etc.

65. What is difference between ingestion and defication?

Ans. Ingestion: The process of taking in food.

Defecation: Elimination of undigested food from the body

66. Differentiate between the term Ingestion and digestion.

Ans. The difference between ingestion and digestion is given below.

Ingestion:

Ingestion is a phase of digestion which is involved in the process of taking in food.

Digestion:

It is a process of breaking up complex food substances into simpler

substances.

67. What is difference between assimilation and absorption?

Ans. The difference between assimilation and absorption is given below:

Assimilation:

A phase of digestion which involved in the conversion or incorporation of absorbed simple food into the complex substances constituting the body is called assimilation.

Absorption:

A phase of digestion in which diffusion of digested food into blood and lymph is carried out is called Absorption.

68. Why is digestion neccessory for human cells?

Ans. Cells of human's body require oxygen, water, salts amino acid, simple sugar, fatty acid and vitamins etc. These can cross cell membranes to enter cells. Amino acid, simple sugar and fatty acid are rare in our environment. Such substances are usually part of larger molecules like protein, polysaccharides and lipids, which cannot cross cell membrance. There is a need of converting such large and not diffuseable molecules into smaller and diffuseable molecules. This is achieved through the process of digestion.

69. What is difference between pepsin and pepsinogen?

Ans: Pepsinogen is inactive form of pepsin enzyme, and it is converted to pepsin in the presence of HCL in the gastric juice. Pepsin helps in hydrolyses of protein in digestion process.

70. Write the difference between assimilation and defection.

Ans: Assimilation: A phase of digestion which is involved in the conversion or incorportion of absorbed simple food into the complex substances constituting the body is called assimilation.

Defection: Elimination of undigested food from the body, is called defection.

8.3.1 Role of Liver

71. Define Alimentary Canal.

Ans. The digestive system of human consists of a long tube that extends from mouth to anus. This tube is called alimentary canal or gut.

72. Which parts are there in human alimentary canal? Write their names.

Ans. Human's gut or alimentary canal is consist of following parts.

i) Oral cavity
ii) Pharynx
iii) Oesophagus
iv) Stomach
v) small intestines
vi) Large intestine.

73. Write names of two diseases of gut.

Ans. Gut: The digestive system of human consists of a long tube that extends from mouth to anus. This tube is called gut or alimentary canal.

Diseases: Following are some gut diseases that affect a number of people in Pakistan.

i) Constipation
ii) Ulcer
iii) Diarrhoea

74. Define Mastication.

OR Write benefit of Mastication.

Ans. Mechanical digestion of food is called Mastication. It is include grinding and chewing the food by teeth also called Mastication.

75. How will you differentiate between bolus and chyme?

OR What is meant by Bolus?

OR. What is meant by chyme?

OR Whati s chyme?

Ans. Bolus:

Partially digested food, rolled up by the tongue into small, slippery, spherical mass called bolus.

Chyme:

It is Partially digested food and soup-like mixture which enters from stomach to duodenum is called chyme.

Examples: The partial digestion of starch in our bite of bread and the soup-like mixture of protein in mutton are examples of chyme.

76. Bolus is a piece of food. How?

Ans. During the process of chewing.

lubrication and semidigestion, the pieces of food are rolled up by the tongue into small, slippery, spherical mass called bolus. We swallow bolus and push it in oesophagus and pharynx.

77. What is stomoch? Where does it locate?

Ans. Stomach: Stomach is a dilated part of Alimentary Canal. Its shape is like English alphabet "J". It is situated beneath the diaphragm on left side of the body within abdomen.

78. What do you mean by peristalsis?

Ans. Peristalsis: Peristalsis is the movement of food from oral cavity towards Rectum. In other words it is defined as Peristalsis means wave motion of contraction and relaxation of smooth muscles in the wall of Alimentary canal.

79. Write a short note on gastric gland.

Ans. Gastric Gland:

i. Gastric glands are situated on inner most layer of stomach cavity and are composed of Epithelial tissues.

ii. Gastric gland secrete Gastric juice which contains water, Hydrochloric Acid and a protein digesting Inactive enzyme pepsinogen.

80. What is Gastric Juice? Name the Enzyme present in Gastric Juice.

Ans. Gastric glands of stomach secrete gastric juice. The enzyme pepsinogen is present in it.

81. What is gastric juice? Also write down its chemical composition.

OR Write the composition of gastric juice.

Ans. Gastric Juice: Gastric juice is secreted from Gastric gland. Its main function is to digest proteins in the stomach.

Chemical Composition:

i) Water ii) Mucous
iii) Hydrochloric Acid iv) Pepsinogen

82. What is the affect of HCl on Pepsin?

OR Write two functions of HCL.

OR Describe the function of pepsin in stomach?

OR Write the functions of HCL and pepsin in digestion.

Ans. The functions of HCL and pepsin in digestion are given below.

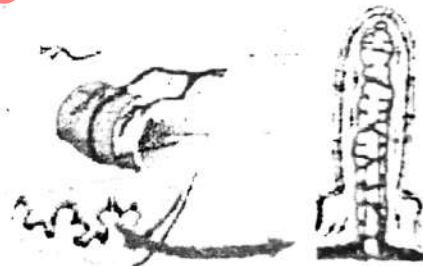
Funtions of HCL:

i) HCL converts the inactive enzyme pepsinogen into its active form pepsin.

ii) HCL also kills microorganisms present in food.

Function of pepsin: Pepsin is a powerful protein digesting enzyme. During digestion it partially digests the protein portion of food (bulk of mutton) into polypeptides and shorter peptide chains.

83. Define villi.

Ans. There are circular folds in the inner wall of ileum. These folds have numerious finger-like projections called villi (singular: villus). Villi increase the surface area of the inner walls and it helps a lot in the absorption of digested food.

84. What is meant by Sphincter?

OR What is Sphincter? Give names of its two types.

Ans. Opening which are guarded by muscles called sphinctre. There are two types.

i) Cardic sphincter
ii) Pyloric sphincter

85. What is meant by cardiac and pyloric sphincter?

OR Write the role of cardiac and

phloric sphincter.

Ans. Muscles are responsible for opening and closing of sphincter.Stomach has two sphincters.

Cardiac sphinctes: Cardiac sphinctes is between stomach and oesophagus

Pyloric sphincter: pyloric sphincter is between stomach and small intestine.

86. Define churning.

OR Define the function of Churning.

Ans. Food is further broken down in stomach through churning. Stomach wall muscles contract and relax. These muscular movements help in release of gastric juice and mixing of food. Churning also generates heat for melting lipids.

87. Write the name of two juices secreted in small intestine of man.

Ans. i) Pancreatic Juice
ii) Intestinal juice

88. Write the role of duodenum in small intestine.

Ans. **Duodenum:** It comprises of first 10 inch (25cm) of small intestine and it is the part of alimentary canal where most of the digestive progress occurs. Here, food is further mixed with three different secretions (bile juice, pencreatic juice and intestinal juice).

Role of Duodenum in small intestine:

i) **Bile juice** helps in digestion of lipids through emulsification.

ii) **Pancreatic juice** contains enzymes which digest proteins and carbohydrate.

iii) **Enzymes of intestinal juice digest all type of food.**of lipids present in food.

89. Write any two functions of large intestine.

Ans. **Functions of large intestine:**

i) From colon, water is absorbed into blood. As water is absorbed, the solid remains of food are called faces. Faeces mainly consists of the undigested material. Large number of bacteria, sloughted off cells of alimentary canal, bile pigments and water are also part of faeces.

ii) Faeces are temporarily stored in rectum, which opens out through anus. Under normal conditions when the rectum is filled up with faeces, it gives rise to a reflex and anus is opened for defecation.

90. Write three parts of large intestine.

Ans. (i) Caecum (ii) Colon
(iii) Rectum

91. What is Appendix?

OR What do you know about appendix?

Ans. From the blind end of caecum there arises a non-functional finger-like process called appendix. Inflammation of the appendix due to infection cause severe pain. The infected appendix must be removed surgically otherwise it may burst and the inflammation may spread in abdomen.

92. Describe two functions of oral cavity.

Ans. **Following are two functions of oral cavity:**

(i) Food selection is one function of oral cavity.

(ii) The second function of oral cavity is grinding of food by teeth.

(iii) The third and fourth functions of oral cavity are lubrication and chemical digestion of food.

93. Why pepsin does not digest stomach wall?

Ans: Pepsin is secreted as inactive pepsinogen, which requires HCl for activation. The mucous of gastric juice forms a thick coating over the inner walls of stomach and neutralizes the HCl there. It makes pepsinogen difficult to be activated and to digest stomach wall.

94. Write down two functions of Oral

Cavity.

Ans: Functions of oral cavity:

(i) Food selection is first function of oral cavity.

(ii) The second function of oral cavity is the grinding of food by teeth.

(iii) The third and fourth function of oral cavity are lubrication and chemical digestion of food.

8.3.2 Role of Liver

95. What do you know about liver?
OR. Write the weight and size of liver in an adult human.

Ans. Liver:

i. Liver is the largest gland of the human body.

ii. It is situated beneath the diaphragm on right side of abdomen.

iii. Lobes are its raised parts and its apparent colour is dark Red.

Weight of Liver:
The weight of Liver in an adult human is 1.5 Kg and its size is equal to that of a Food ball.

96. Which is largest gland of human body and where it located?

Ans. Liver is the largest gland of body. It is multi-lobed and dark reddish in appearance. It lies beneath the diaphragm on the right side of abdomen.

97. Write down two functions of liver?
OR Write two functions of liver other than digestion of food.

Ans.

i) It removes amino groups from amino acids i.e. de-lamination.

ii) Destroys the old red blood cells.

98. What is Bile Juice and what is its function?

Ans. Bile Juice is secretion of liver and helps in digestion of lipid through emulsification.

99. What is gall bladder? Give its function.

Ans. Gall Bladder:
A pear shaped greenish yellow sac i.e. "Gall bladder", lies along the right lobe of liver on ventral side.

Function: Gall bladder stores bile. When gall bladder contracts, bile is released into duodenum. It contains bile salts for the emulsification of lipids.

8.4 Disease of Elimentary Canal

100. What is Diarrhoea? What are its causes?

Ans. Diarrhea: Diarrhea is a condition in which the suffer has frequent watery, loose bowel movements.

Causes: This conditions may be accompanied by abdominal pain, nausea and vomiting. It occurs when required water is not absorbed in blood from colon. The main cause of diarrhea include lack of adequate safe water. Diarrhea is also caused by viral or bacterial infections of large intestine.

101. Write down symptoms of Diarrhoea.

Ans. i) Abdominal pain.

ii) Nausea

iii) Vomiting

102. What is ulcer? Write two symptans of ulcer.
OR Write the symptoms of ulcer?

Ans. Ulcer: Ulcer (peptic ulcer) is a sore in the inner wall of gut. In ulcer, the acidic gastric juice gradually breaks down the tissue of the inner wall.

Symptoms:
The symptoms of ulcer are given below.

(i) Abdominal burning after meals or at midnight.

(ii) Rush of saliva after an episode of regurgitation. Severe ulcer may

causes Nausea, loss of appetite and weight loss.

103. What are major causes of ulcer in stomach?

OR Write the causes of ulcer.

OR What is gastric ulcer? Write its causes.

Ans. Stomach ulcer is known as gastric ulcer the causes of ulcer include excess acid, infection, long term use of anti-inflammatory medicines (including aspirin), smoking, drinking coffee, colas, and eating spicy foods.

104. Enlist preventive measures to save from Ulcer:

Ans. Preventive Measure: We should abstain from spices, Acidic food and smoking to save us from Ulcer.

105. How ulcer is treated?

Ans. Ulcer is treated with medicines, which neutralize the acidic affects of gastric juice, spicy, acidic foods and smoking should be avoided as preventive measures.

106. What are major causes of Constipation?

OR Write the causes of constipation.

Ans. Constipation is a condition where a person experiences hard faeces that are difficult to eliminate. The main causes of constipation include excessive absorption of water through colon, insufficient intake of dietary fibre, dehydration, use of medicines (e.g. those containing iron, calcium and aluminium) and tumours in rectum or anus.

Long Question (Unsloved)

8.1

1. Describe the role of Macro nutrients in plant life.

OR Define micro and macro nutrients. Also describe the role of nitrogen in plants life.

2. Write down the importance of fertilizers.

OR Write a note about importance and harms of fertilizers.

8.2

3. What are Vitamins? Explain the importance of vitamin A and C in human body.

4 What diseases are caused due to the deficiency of vitamin "D". Explain.

5 Write a detailed note about functions, defficiencies and sources of important vitamins.

6 Write a note on lipids.

7. Write note on Carbohydrates and Protein.

8. Explain that Proteins are essential part of food.

9. Give significance of Iron, Iodine and Fluoride in human diet.

10. Explain role of calcium and iron in animals.

11. Write a note on ascorbic acid.

8.2.1

12. Write note on dietary fibres.

OR Write a note on Water and Dietry fibre in diet(food).

8.2.3

13. Describe any three effects of Malnutrition on humans.

OR Define multrition and explain its effects.

OR Write a note on PEM. Protein energy malnutrition.

OR Define Protein energy muinutrition and briefly explian diseases due to it

OR Describe two important diseases due to protein energy malnutrition.

14. What are the major cause of malnutrition?

OR. Write four major causes of Malnutrition.

15. Explain causes of famine.

16. Describe mineral deficiency diseases in man.

OR Describe minerals deficiency diseases.

8.3 8.3.1

17. Write a note on digestion of food in human stomach.
OR Write the functions and draw structure of stomach.
OR Describe digestion and absorption in small intestine.
OR Describe the role of small intestive in digestion.
OR Write about main changes which occurs in digestion of food in stomach.
OR Describe the structure fo stomach with labelled diagram.
OR Write role of small intestine in complete digestion and absorption of food.
18. Describe the role of oral cavity in digestion of food.
OR Write different functions of oral cavity.
OR How Oral Cavity plays a role in selection, grinding and partial digestion of food?

8.3.2

19. Write down detailed note on role of Liver in human.
OR Write the functions of liver.
OR Write down four functions of Liver.
OR Describe the other function of liver beside digestion
OR What do you know about Liver? Write down any four functions of Liver.

8.4

20. Write a note on the causes of diarrhoea and constipation.
OR Write a detail of three human diseases in elementary canal.
OR Briefly explain two diases of gut.

Unit-9 Transport

(MCQs)

9.1 Transport In Plants

1- **Regulate the openning and closing of stoma.**
(A) Calcium (B) Phosphoruos
(C) Sulphur (D) Potassium

2- **The stomata open when guard cells:**
(A) Become Flaccid
(B) Gain chloride ions
(C) Become turgid
(D) Loose water

9.1.1 Uptake of Water and Ions

3- **Tissue responsible for the transport of water and dissolved substance from roots to aerial parts in plants is:**
(A) Phloem (B) Xylem
(C) Cambi1um (D) Ground

4- **The roots and root hairs absorb water from soil:**
(A) Osmosis (B) Diffusion
(C) Phloem (D) Air

5- **Severe deficiency of water in plants is called as:**
(A) Dessication
(B) Respiration
(C) Transpiration
(D) Nutrition

9.1.2 Transpiration

6- **Water removed due to transpiration:**
(A) 80% (B) 30%
(C) 90% (D) 40%

7- **Transpiration rate depend upon:**
(A) Leaf surface area
(B) Water content
(C) Temperature
(D) All of these

8- **The force which carries water upward through Xylem in plant is called:**
OR **Force that is responsible for the conduction of water and salts from soil by the roots is called:**
(A) Osmosis